AMENDMENTS

In the Claims

The following is a marked-up version of the claims with the language that is underlined ("___") being added and the language that contains strikethrough ("——") being deleted:

1. (Currently Amended) ~~In a graphics system, a computer-implemented~~ A method ~~of~~ for rendering a graphic primitive in a graphics system, the graphic primitive having a plurality of sides that define the edge of the primitive, the method comprising:

receiving, in the graphics system, a signal from an interface, the signal comprising data about a plurality of vertices of the primitive and a variable at a point being processed;

selecting, in the graphics system, an interior point within the graphic primitive;

selecting, in the graphics system, at least two side points located on a side of the graphic primitive;

determining, in the graphics system, for each of the at least two side points, a first ratio according to a first channel value for each respective one of the at least two side points and the primitive vertices data;

determining, in the graphics system, one or more remaining channel values for each of the at least two side points based on the respective first ratio;

determining, in the graphics system, a second ratio according to a first channel value for the interior point and the first channel values of the at least two side points;

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determining, in the graphics system, one or more remaining channel values for the interior point according to the second ratio and the corresponding channel values of the at least two side points; and

storing, in the graphics system, one or more of the additional channel values for the interior point.

2. (Currently Amended) The method of claim 1, wherein determining, in the graphics system, one or more remaining channel values for each of the at least two side points further comprises performing, in the graphics system, linear interpolation using an interpolation engine to determine the interpolated channel values of the two side points.

3. (Currently Amended) The method of claim 1, wherein determining, in the graphics system, one or more remaining channel values for each of the at least two side points further comprises performing, in the graphics system, perspective interpolation using an interpolation engine to determine the interpolated channel values of the two side points.

4. (Currently Amended) The method of claim 1, further comprising repeating, in the graphics system, each of the aforementioned steps for a plurality of points in the graphic primitive.

5. (Original) The method of claim 1, wherein the channel value represents color.

6. (Original) The method of claim 1, wherein the channel value represents luminance.

7. (Original) The method of claim 1, wherein the channel value represents a texture coordinate.

8. (Canceled).

9. (Currently Amended) A method of rendering a graphic primitive in a graphics system, the primitive including a plurality of edges, the method comprising:

receiving, in the graphics system, a signal from an interface, the signal comprising data about the plurality of vertices of the primitive and a variable at a point being processed;

determining, in the graphics system, a first ratio for a first point on a first edge of the graphic primitive, the first ratio determined for a first channel value using the primitive vertices data;

deriving, in the graphics system, one or more additional channel values for the first point based on the first ratio;

determining, in the graphics system, a second ratio for a second point on a second edge of the graphic primitive, the second ratio determined for a second channel value using the primitive vertices data;

deriving, in the graphics system, one or more additional channel values for the second point based on the second ratio;

determining, in the graphics system, a third ratio for an interior point based on the channel values for the first point and the channel values for the second point;

determining, in the graphics system, one or more additional channel values for the interior point based on the third ratio; and

storing, in the graphics system, one or more of the additional channel values for the interior point.

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10. (Currently Amended) The method of claim 9 wherein the step of determining, in the graphics system, the first ratio for the first point comprises determining, in the graphics system, the channel values of end points of the first edge.

11. (Currently Amended) The method of claim 9 wherein the step of determining, in the graphics system, the second ratio of the second point comprises determining, in the graphics system, the channel values of end points of the second edge.

12. (Currently Amended) The method of claim 9 wherein determining, in the graphics system, one or more additional channel values includes using, in the graphics system, depth values of the first point and second point to determine a channel value for the interior point.

13. (Canceled).

14. (Previously Presented) A system for rendering a graphic primitive, the graphic primitive including a plurality of vertices and edges, the system comprising:

a plurality of agents configured to receive information from an interface related to the plurality of vertices, a point within the graphic primitive, and generate output signals;

an arbiter coupled to the plurality of agents and configured to receive the output signals and to generate request signals;

an interpolation engine configured to receive the request signals and generate an output ratio signal dependent on at least some of the output signals from the plurality of agents; and

a router coupled to the interpolation engine and configured to transmit the output ratio signal to an input of at least one of the plurality of agents.

15. (Currently Amended) A system for rendering a graphic primitive in a graphics system, the graphic primitive having a plurality of sides, the system comprising:

a channel value input device configured to determine a channel value for each of a plurality of vertices of the graphic primitive using data received from an interface;

a point specifier, coupled to the channel value input device, configured to select an interior point within the graphic primitive; and

an interpolation engine coupled to the point specifier and to the channel value input device, configured to determine a first ratio according to a first channel value for each of at least two side points using data received from the interface, determine an interpolated channel value for each of the at least two side points using the first ratio and data received from the interface, determine a second ratio according to a first channel value for the interior point and the first channel values of the at least two side points and further configured to determine a channel value at the selected interior point using the second ratio and interpolation of the channel values for each of the at least two side points.

16. (Original) The method of claim 9 wherein the channel value of the interior point is further dependent upon a distance E between the interior point and the first point, and dependent upon a distance F between the interior point and the second point.

17. (Original) The method of claim 10 wherein the channel value of the first point is further dependent upon a distance A between the first point and the first end point of the

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first edge, and dependent upon a distance B between the first point and the second end point of the first edge.

18. (Original) The method of claim 11 wherein the channel value of the second point is further dependent upon a distance C between the second point and the first end point of the second edge, and dependent upon a distance D between the second point and the second end point of the second edge.

19-22. (Canceled).

23. (Currently Amended) A method of generating interpolated values for use in rendering a graphic primitive in a graphics system, the method comprising:

receiving, in the graphics system, from an interface an independent variable X representing the physical portion of a point within the graphic primitive;

receiving, in the graphics system, vertex values X_0, X_1 of a primitive edge having the point within the graphic primitive with the physical position represented by the independent variable X;

receiving, in the graphics system, depth values Z_0, Z_1 associated with the vertex values X_0, X_1;

calculating, in the graphics system, a ratio value dependent upon the independent variable at the point X, vertex values X_0, X_1, and depth values Z_0, Z_1; and

storing, in the graphics system, the ratio value.

24. (Currently Amended) The method of claim 23 further comprising:

receiving, in the graphics system, color values associated with the vertex values X_0, X_1; and

calculating, in the graphics system, interpolated color values for the point based upon the ratio value and the color values associated with the vertex values of X_0, X_1.

25. (Currently Amended) The method for claim 23 further comprising:

receiving, in the graphics system, texture values associated with the vertex values X_0, X_1; and

calculating, in the graphics system, interpolated texture values for the point based upon the ratio value and the texture values associated with the vertex values X_0, X_1.

26. (Currently Amended) The method of claim 23 further comprising calculating, in the graphics system, a screen-based Z coordinate for the point based upon the independent variable X, vertex values X_0, X_1, and depth values Z_0, Z_1.

27. (Canceled).

28. (Currently Amended) The method of claim 1, wherein determining, in the graphics system, one or more remaining channel values for the interior point further comprises performing, in the graphics system, linear interpolation using an interpolation engine to determine the channel value of the selected interior point within the graphics primitive.

29. (Currently Amended) The method of claim 1, wherein determining, in the graphics system, one or more remaining channel values for the interior point further comprises performing, in the graphics system, perspective interpolation using an interpolation engine to determine the channel value of the selected interior point.